



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,534	06/24/2005	Minoru Umemoto	04632.0066	3553
22852	7590	05/27/2009		
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER BONK, TERESA	
			ART UNIT 3725	PAPER NUMBER
			MAIL DATE 05/27/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/540,534

**Applicant(s)**

UMEMOTO ET AL.

**Examiner**

TERESA BONK

**Art Unit**

3725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 February 2009.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4 and 7-12 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,2,4 and 7-12 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 10 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB/003)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 7-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimoto et al. (US Patent 4,513,597). Kimoto et al. discloses a method for fining a metal surface, comprising a process for forming crystal grains having sizes 1-5  $\mu\text{m}$  (Column 3, lines 38-48) at the surface of a metal product by means of projecting or peening shots or projectiles (5) to the surface while a power per unit of area of the surface is controlled (microcomputer 36) at a predetermined value, calculated with the following example ranges: height of 0.1 to 0.4 mm, mass of the metal weight approximately 3-139 kg, and the speed of the weight 12-52 m/sec (Example 1, Columns 7-8, lines 50+ - lines 1-15, respectively).

With regards to claims 2 and 10, Kimoto et al. discloses wherein the shots or projectiles are made from high carbon steel and the diameters of the shots or projectiles are 100-400  $\mu\text{m}$  (Column 7, lines 63-65).

With regards to claims 7 and 12, Kimoto et al. discloses a metal product (1) having surfaces hardened by the method for fining a metal surface.

With regards to claims 8 and 9, Kimoto et al. discloses wherein the unit area is calculated by multiplying a contact surface of a projectile or a shot by a number of the shots or projectiles

and wherein the unit area is calculated by subtracting overlapped areas that are calculated based on the number of shots or projectiles that have their contact surfaces overlap from a sum of the contact surfaces (Column 6-7, lines 49+ - lines 1-50, respectively).

Kimoto discloses the invention substantially as claimed except for the particular grain size and power per unit of area. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the particularly claimed values since it has been held that discovering an optimum value of a results effective variable involves only routine skill in the art.

Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimoto et al. in view of Shirai et al. (US Patent 5,302,218), previously presented. Kimoto discloses the invention substantially as claimed except for wherein the process for peening shots to the surface is carried out while the temperature of the metal surface is controlled to be at room temperature. Shirai et al. teaches shot peening a metal product's surface at room temperature (Column 1, lines 27-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the peening process at the particularly claimed temperature because doing so is considered common knowledge or "conventional" (Column 1, line 27).

### ***Response to Arguments***

Applicant's arguments filed February 3, 2009 have been fully considered but they are not persuasive.

With regards to Applicant's arguments pertaining to the crystal grain size, the Examiner maintains that the Kimoto reference forms grain crystals on the metal surface (Column 1, lines 9-

15) and performs shot peening (Column 3, lines 38-45), a well known method to achieve grain crystals. Then, as stated in the 103(a) rejection of above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the particularly claimed grain size since it has been held that discovering an optimum value of a results effective variable involves only routine skill in the art.

With regards to Applicant's arguments pertaining to the "greater than 11 KJ/sec\*mm<sup>2</sup>", value in claim 1, the Examiner points out on page 6, paragraph 5 of the Applicant's specification, that height, weight, and speed ranges are provided and conclude, without demonstration or further explanation of how they result, with the aforementioned value for the power per unit area. Therefore, the Examiner maintains that since the Kimoto reference discloses values in these ranges that it would have been obvious to one of ordinary skill in the art to discover the value.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TERESA BONK whose telephone number is (571)272-1901. The examiner can normally be reached on Monday-Friday 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dana Ross can be reached on 571-272-4480. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dana Ross/  
Supervisory Patent Examiner, Art Unit 3725

Teresa M. Bonk  
Examiner  
Art Unit 3725